REMARKS

The Office Action mailed August 29, 2006 considered claims 1-23. Claim 12 was rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for handling consecutive control points, does not reasonably provide enablement for non-consecutive control points. Claims 1, 12, and 20 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2-10, 12-19, and 21-23 were rejected as not correcting the deficiencies of their parent claim(s). Claims 1-3, 7-8, 10-11, and 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over Park (U.S. Patent App. No. 2005/0089237 A1) (hereinafter Park). Claims 5-6, 12-15, and 17-18 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sander-Cederlof et al. (U.S. Patent No. 5,500,927) (hereinafter Sander) and Piper (U.S. Patent Pub. No. 2005/0089237) in view of Park as applied to claim 1 above, and further in view of Martinez et al. (U.S. Patent No. 5,319,358) (hereinafter Martinez). Claim 9 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sander/Piper in view of Park as applied to claims 7 and 8 above, the rejections to which are herein incorporated by reference, in view of Lewis et al. (U.S. Patent No. 4,696,707) (hereinafter Lewis). Claim 15 was rejected under 35 U.S.C. § 103(a) as unpatentable over Sander and Piper in view of Park and Martinez as applied to claim 12 above, and further in view of Scola et al. (U.S. Patent No. 6,714,679 B1) (hereinafter Scola) and Foley – as cited in Piper 2:20-25. Claims 18-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sander and Piper in view of Park and Martinez as applied to claim 12 above, the rejection to which are herein incorporated by reference, in view of Lewis.[1]

By this amendment, claims 1, 12, and 20 are amended such that claims 1–23 remain pending. Claims 1, 12, and 20 are independent claims which remain at issue.

The present invention is directed generally towards adaptively filtering outlines of typographic characters to simplify representative control data. Claim 1 recites, for example, as is claimed in combination will all the recited elements of the claim, identifying local extrema of a graphical object, identifying sets of local extrema lying on an edge of the graphical object,

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[1] Although the prior art status of the cited art is not being challenged at this time, Applicant reserves the right to challenge the prior art status of the cited art at any appropriate time, should it arise. Accordingly, any arguments and amendments made herein should not be construed as acquiescing to any prior art status of the cited art.

determining that there are control points of the graphical object which lie on a common edge of a simplified grahical object, and generating simplified control data representing an outline of the simplified graphical object. Claim 20 is a computer program product embodiment of the method in claim 1. Claim 12 recites, in combination with all the elements recited in the claim, a computing system implementing a method of identifying local extrema of an outline of a graphical object and determining that the local extrema are within a specified tolerance of an off-outline control point and generating simplified control data which represents an outline of common edges of a simplified grahical object.

The drawings were objected to "because they fail to show that there are any control points [that] are common between simplified graphical object 601 and 602 as described in the specification, paragraphs [0057-0060]."[2] First, it should be noted that an inadvertent typographical error was discovered in ¶ 57 of the specification. Note that in fig. 6 of the Application, item "601" is identified as the "Graphical Object" and item "602" is identified as the "Simplified Graphical Object." However, ¶ 57 of the Specification contains an error, reciting "graphical object 602 includes some control points . . . ." Paragraph 57 should have referred to "graphical object 601" and to "simplified graphical object 602" as is correctly indicated in figure 6. This error in ¶ 57 has now been corrected. It should further be noted that ¶¶ 57–60 do not require that there must be control points common between the graphical object and the simplified graphical object. Indeed, the simplified graphical object may contain no control points in common with the graphical object (as is correctly depicted in item 602 of figure 6). The only requirement is that "the simplified graphical object 602 can be derived from the control points of graphical object 601."[3] Control points on and off an outline are common artifacts of Bezier curves which are correctly depicted in item 601 of figure 2. As now corrected, Specification ¶ 57 reads, in relevant part, "graphical object 601 includes some control points that are on outlines 613 and 623 and some control points that are off of outlines 613 and 623" which is exactly what you'd expect for the control points of the Bezier curves defining the indicated outlines. Although the Examiner has required that corrected drawings be supplied, Applicants submit that is now unnecessary in light of the corrected specification and explanation, above.

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[2] Office Communication, p. 4.
[3] Specification ¶ 57.

Independent claims 1, 12, and 20 were rejected under 35 U.S.C. § 112 as being indefinite because of the language "at least one of interspersed between or at the local extremum." This language has been amended in the respective claims, as suggested by the Examiner, to cure the problem. Applicants submit that the language of the claims is now sufficiently definite. Examiner further objected because "it is not possible for something to be interspersed between only one point or region." The claims have been amended to further clarify that language and Applicants submit that this problem is now also cured. Finally, Examiner objected to the language "an outline . . . of a simplified graphical object of the graphical object" as being redundant language and being "unclear which graphical object is being utilized as the referent."[4] To clarify, Applicants have amended that language to instead read "an outline . . . of a simplified graphical object, the simplified graphical object having been derived from the graphical object" to make it clear that the outline is of the simplified graphical object.

Claim 12 was rejected under 35 U.S.C. § 112 because it was "unclear whether or not the control point is associated with a local extremum." The claim has been amended to cure the ambiguity between singular and plural that the Examiner points out and, furthermore, the amendment should make clear that the method comprises identifying extrema on the outline and control points off the outline. After having identified such points, determining of directions and tolerances takes place.

Claims 1, 12, and 20 were also rejected under 35 U.S.C. § 103 for obviousness. Examiner argues that Sander teaches "identifying a plurality of sets of local extrema, each local extremum in a set of local extrema being on a common edge of the outline of the graphical object, each set of local extrema including one or more local extremum from the plurality of identified local extrema." However, it should be noted that Sander teaches "dividing" not the identified local extrema, but dividing a "curve segment into two or more segments."[5] Dividing a curve segment into sub-segments should not be considered equivalent to "identifying a plurality of sets of local extrema." In identifying a plurality of sets, each set including one or more local extrema, it is possible for a local extremum to be a member of more than one set. Such is, in fact, the case when a local extremum is the corner of a square — that point would be a member of a set defining each edge of the square common to that corner. Furthermore, Sander teaches

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[4] Office Communication p. 7.
[5] Sander col.6 1.20–30.

creating only a "list" of points in which each point may or may not be a "local extrema."[6] Although Sander may divide curves into segments, Applicants submit that Sander nowhere teaches identifying a "plurality of sets of local extrema, each local extremum in a set of local extrema being on a common edge of the outline of the graphical object, each set of local extrema including one or more local extremum from the plurality of identified local extrema." Examiner cites to Sander col.7 l.40–57 to point out that multiple extrema may be included in a set and, seemingly in contradiction, that "very clearly only one extrema is selected."[7] Applicants would like to point out that the cited section of Sander refers to a step where "interesting extrema" are *specified by the user* and are guaranteed to "be included in the final output path" but are clearly not selected as having been on a common edge of an outline of the graphical object.[8]

Examiner cites to Piper for "determining that control points interspersed between and/or at the local extremum of each set of local extrema are on a common edge of a simplified outline including when the control points are off of the outline of the graphical object." However, it should be noted that Piper clearly teaches away from determining that control points lying on a common edge of a simplified outline include control points which are "off the outline of the graphical object." The cited portion of Piper, in contrast, teaches that "control points lie on part of the line," the line in Piper being the actual line of the original graphical object, not an edge of a simplified object which includes a control point lying *off the outline* of the graphical object.[9] Examiner then cites to Park for teaching "screening to eliminate unnecessary control points"[10] but Applicants, respectfully, submit that "eliminating unnecessary control points" does not read on the element of the claim cited by the examiner. The element of the claim cited is an act of determining a property of certain points, that "control points . . . are on a common edge," — not eliminating any points.

Examiner then cites to Piper, Sander, and Park for "generating simplified control data that represents an outline of the common edges of a simplified graphical object of the graphical object, the simplified control data defining a common edge including straight line segments defined by and through the control points that are at least one of interspersed between or at the

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[6] Sander col.6 l.30–67.
[7] Office Communication pp. 10–11.
[8] Sander col.7 l.40–57.
[9] Piper col.2 l.25–35.
[10] Office Communication p. 11.

local extremum including when the control points are off of the outline of the graphical object." Examiner states that "Park clearly shows that [0021] Bezier curve control points have off-line control points and the straight lines use those control points."[11] It should be noted that off-line control points are an inherent artifact of Bezier curves. It should further be noted that Park states if "the curvature is not large, then a Bezier curve may be adequately represented by a replacement straight line."[12] However, looking at Park ¶ 7, it is clear that Park teaches away from "an outline of the common edges of a simplified graphical object . . . the simplified control data defining a common edge including straight line segments defined by and through the control points . . . including when the control points are off of the outline of the graphical object." Park, in contrast, teaches that the off-outline Bezier control points are eliminated — the off-outline control point in Park (fig. 7 ref. 708) is eliminated and clearly does not lie on the edge of the simplified object (fig. 7 ref. 702). So, Park does not teach that a control point which is off the outline of a graphical object will lie *on* the edge of a simplified object. In contrast, Park clearly teaches away from that. As is clearly seen in fig. 6 of the Specification, off-outline control points lie *on* the edge of the simplified graphical object.[13]

Examiner argues that "Sander teaches . . . straight line segments can be defined by both on-line and off-line control points."[14] This argument mischaracterizes both Sander and the present invention. Firstly, all points used in Sander's "list" lie on the original graphical object, itself.[15] No points which were off Sander's original outline are included in Sander's list. In the present invention, points are used in the identified sets *including* control points which *did not lie* on the outline of the graphical object. Second, in the present invention, control points which were not on the outline of the original grahical object *do* lie on an edge of the simplified graphical object. This is nowhere found in Sander.[16]

Finally, Examiner argues that "Park clearly teaches that straight lines on common edges can be defined *through* off-line control points."[17] This, too, is a mischaracterization of Park.

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[11] Office Communication p. 12.

[12] Park ¶ 21.

[13] Specification, fig. 6 ref's 614, 616. Note that the dashed line in 601 becomes the edge of the simplified object in 602.

[14] Office Communication p. 12.

[15] *See, generally,* Sander. Although off-outline control points may have existed in the definition of Sander's original object, they are not preserved in Sander's simplified "list."

[16] *See, generally,* Sander.

[17] Office Communication p. 13.

Park, in contrast, teaches how the off-outline control points can be eliminated. Park fig. 7 clearly shows how the off-outline Bezier control point 708 *does not lie* on the derived or resulting line 702 (of the simplified grahical object). The line in Park 702 lies between the two on-outline control points (702 & 706) but does not go through the off-outline control point 708.[18] The present invention teaches how an edge of a simplified graphical object is drawn so that a control point which was not on the outline of the graphical object actually *does lie* on the edge of the simplified grahical object.

As per the above discussion, Sander and Park do not teach off-outline control points such that the "simplified control data defin[es] . . . a common edge including straight line segments . . through the control points . . . including when the control points are off of the outline of the graphical object." In contrast, both Sander and Park teach away from the off-outline control points lying on an edge of the resulting simplified graphical object. In both Sander and Park, all the points are chosen from points which originally lay on the original object. Because both Sander and Park insist that all points come from points lying on the outline of the original graphical object, neither Sander nor Park, neither separately nor in combination, teach the off-outline control points lying on an edge of the resulting simplified graphical object. Furthermore, Piper does not teach the missing elements. The line in Piper is the outline of the original graphical object and Piper nowhere defines an edge upon which lies off-outline control points.[19]

Because the combination of the cited prior art fails to teach all the elements of the claim(s), Applicants respectfully request that the rejections of claims 1 and 20 be withdrawn and the claims, as now amended, be allowed.

Claim 12 was rejected, in part, on similar grounds. The discussion of Sander, Park, and Piper, above, applies equally to claim 12 and Martinez is cited only for the directional elements but does not supply the elements missing from Sander, Park, and Piper as discussed above. Because the combination of the cited prior art fails to teach all the elements of the claim, Applicants respectfully request that the rejection of claim 12 be withdrawn and the claim, as now amended, be allowed.

Although this is fairly complicated material, Applicants have attempted to explain the clear differences between the cited prior art and the present invention and why the cited prior art

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[18] Park fig. 7.
[19] *See, generally*, Piper.

teaches away from the innovation in the present invention. However, it may be worthwhile to discuss this material further if the Examiner feels it would be helpful. In such case, Applicants encourage the Examiner to call the undersigned representatives to discuss this response and this application to facilitate the prosecution of the application.

In view of the foregoing, Applicants respectfully submit that the other rejections to the claims are now moot and do not, therefore, need to be addressed individually at this time. It will be appreciated, however, that this should not be construed as Applicants acquiescing to any of the purported teachings or assertions made in the last action regarding the cited art or the pending application, including any official notice. Instead, Applicants reserve the right to challenge any of the purported teachings or assertions made in the last action at any appropriate time in the future, should the need arise. Furthermore, to the extent that the Examiner has relied on any Official Notice, explicitly or implicitly, Applicants specifically request that the Examiner provide references supporting the teachings officially noticed, as well as the required motivation or suggestion to combine the relied upon notice with the other art of record.

In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is requested to contact the undersigned attorney.

Dated this 15th day of November, 2006.

Respectfully submitted,

RICK D. NYDEGGER
Registration No. 28,651
JENS C. JENKINS
Registration No. 44,803
J. LAVAR OLDHAM
Registration No. 53,409
WORKMAN NYDEGGER
Attorneys for Applicant
Telephone: (801) 533-9800
Facsimile: (801) 328-1707

JCJ:TMB